

In the Claims:

Please enter the claim amendments to claims 1, 3, 8, 9, 14, and 17, as shown. Please cancel claims 2, 5-7, 12, 18, 20, 21, 26, 28 and 32. The claim listing that follows, replaces all previously presented listings.

1. (Currently Amended) A fuzzy distance transform-based computational method for analyzing digital images defining a volumetric region of an object from an image comprising:
 - (a) obtaining an image of the targeted object, comprising bone marrow space, cortical bone, blood vessels or lung airways;
 - (b) finding a plurality of points in the image to generate a fuzzy subset and ~~compute~~ computing a fuzzy distance transform (FDT) of the fuzzy subset, comprising sampling FDT values along a medial axis of a support of the fuzzy subset to estimate regional target object thickness distribution and assigning to a point in the fuzzy subset, its respective fuzzy distance from a complement of a support of the fuzzy subset;
 - (c) compiling a computer processed plot or revised image based upon the computed FDT; and
 - (d) displaying same in high resolution.

Claim 2. Cancelled.

3. (Currently Amended) The method of ~~claim-2~~ claim 1, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

4. (Previously Presented) The method of claim 3, wherein the FDT is in digital cubic space.

Claims 5-7. Cancelled.

8. (Currently Amended) The method of ~~claim-7~~ claim 1, wherein the target object is in or from an animal or human subject.

9. (Currently Amended) The method of ~~claim-8~~ claim 1, wherein the image is obtained by magnetic resonance or computed tomography.

10. (Previously Presented) The method of claim 1, whereby FDT values are sampled along a medial axis directly computed from the fuzzy subset.

11. (Previously Presented) The method of claim 10, wherein the FDT is in digital cubic space.
12. Cancelled.
13. (Previously Presented) The method of claim 11, wherein FDT is computed in digital cubic space of resolution of target object thickness or smaller.
14. (Currently Amended) The method of ~~claim 13~~ claim 1, wherein the targeted object is in or from an animal or human subject.
15. (Previously Presented) The method of claim 14, wherein the image is obtained by magnetic resonance or computed tomography.
16. (Previously Presented) The method of claim 3, further comprising applying one or more additional steps consisting of skeletonizing, feature extracting; analyzing morphological or shape-based object, computing regional object depth; calculating average or regional object thickness distribution; and local scaling.
17. (Currently Amended) A fuzzy distance transform-based computational method for evaluating or diagnosing bone disease in a subject by analyzing digital images defining at least one volumetric region of bone from or in the subject, the method comprising:
- (a) obtaining ~~obtaining~~ an image of targeted bone region; (b) finding a plurality of points in the image to generate a fuzzy subset and computing a fuzzy distance transform (FDT) of the fuzzy subset, comprising sampling FDT values along a medial axis of a support of the fuzzy subset to estimate regional target object thickness distribution and assigning to a point in the fuzzy subset its respective fuzzy distance from a complement of a support of the fuzzy subset;
 - (c) compiling a computer processed plot or revised image based upon the computed FDT; and
 - (d) displaying same in high resolution.

Claim 18. Cancelled.

19. (Previously Presented) The method of claim 18, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

Claims 20-21. Cancelled.

22. (Previously Presented) The method of claim 17, further comprising selecting a therapy based on the diagnosis or evaluation of bone disease in the subject.

23. (Previously Presented) The method of claim 22, further comprising administering said therapy to the subject.

24. (Previously Presented) The method of claim 23, wherein the evaluation further comprises monitoring a progression or regression of bone disease in the subject, during or at one or more times after administering the selected therapy.

25. (Previously Presented) The method of claim 1, further comprising calculating structural thickness of an object from the digital image, wherein a dynamic programming-based algorithm using a plurality of points in a digital image of a target object is used for generating the fuzzy subset, and for calculating the FDT of the fuzzy subset, the FDT terminating in a finite number of steps.

Claim 26. Cancelled.

27. (Previously Presented) The method of claim 26, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

Claim 28. Cancelled.

Claims 29-30. Cancelled.

31. (Previously Presented) The method of claim 17, further comprising calculating structural thickness of an object from the digital image, wherein a dynamic programming-based algorithm using a plurality of points in a digital image of a target object is used for generating the fuzzy subset, and for calculating the FDT of the fuzzy subset, the FDT terminating in a finite number of steps.

Claim 32. Cancelled.

33. (Previously Presented) The method of claim 32, wherein the support comprises a set of all points in the fuzzy subset with a value greater than or equal to a support value.

34. (Previously Presented) The method of claim 33, wherein the FDT is in digital cubic space.